ISSN 0027-965X

NATIONAL LIBRARY OF MEDICINE NEWS

Published for institutions and individuals interested in health sciences communications.

Vol. XXXII, No. 5 Bethesda, Maryland May 1977

Coast-to-Coast— Interactive TV for Health

The new satellite terminal facility at the National Library of Medicine made its debut on March 24. Using the Communications Technology Satellite (CTS) in geostationary orbit some 22,500 miles away, crisp color picture and clear voice signals were exchanged between the NASA Ames Research Center in Palo Alto, California, and NLM's new studio in Bethesda.

The technical achievement of the occasion overshadowed the program itself, for it points toward the day when a complete network of six widely separated earth terminals will be used by the Public Health Service for health communication. Besides NLM's terminal, the other five are being installed at Seattle, Fairbanks, Bozeman (Montana), Lexington, and Denver.

The first program was a technical teleconference between NLM's Lister Hill Center, which is responsible for designing, installing, and coordinating the terminal facilities, and the Hewlett Packard Corporation, a manufacturer of test and computing equipment. Cliff Jones of Hewlett Packard, transmitting from the Ames Research Center, conducted a session on microwave measurement techniques to a group made up of members of the Lister Hill Center's Communications Engineering Branch and RCA employees. The latter, under contract, will actually operate the six PHS/CTS terminals.

The success of this technical session was vital in preparing for the health conference one week later, on March 31, between the National Library of Medicine and several hundred participants at the AMA-sponsored 30th National Conference on Rural Health in Seattle. This teleconference began with a welcome by Dr. Robert Hunter, the president of the University of Washington (from which the broadcast was made); he was followed by Dr. Kenneth Endicott, the Director of the Lister Hill Center, who addressed the conference participants from Bethesda.

In the ensuing question and answer period, Dr. Endicott expressed his belief that the CTS experiment should result in information useful for later commerical application. However, the possibility of a satellite to be used solely for health communication would depend on factors that are yet to be determined, such as the volume of business, cost-effectiveness, and utility.

The program for the remainder of the day consisted of three workshops organized for the conference participants. The first speaker at the National Library of Medicine was Dr. Keith Weikel, the Commissioner of the Medical Service Administration, whose discussion was on Financing Health Care in Rural Areas. The other speakers were Mr. Steve Johnson, Assistant Federal Co-Chairman of the Appalachian

(Continued on page 6)

Elsewhere in this issue...

- *Audiovisual catalog published* 2
- *Changes in ILL procedures* 2
- *Medicine and music exhibit* 3
- *On-line user charges at NLM* 4
- *Grant for network in Idaho* 4
- *New NMAC officials named* 5
- *Flexitime experiment at NLM* 5
- *Annual report published* 8
- *Automation of technical services* .. 11

NATIONAL LIBRARY OF MEDICINE
NEWS

Martin M. Cummings, M.D. Director, NLM

Robert B. Mehnert, Chief, Office of Inquiries and Publications Management

Roger L. Gilkeson Editor (301) 496-6308

Daniel L. Carangi Graphics

8600 Rockville Pike, Bethesda, Maryland 20014

1977 NMAC Catalog Published

Of interest to all concerned with health professional education is the new edition of the *National Medical Audiovisual Center Catalog* (1977). The catalog, which supersedes the 1974 edition, lists 16 mm motion pictures and 3/4-inch videocassettes available on short-term loan from the Library's National Medical Audiovisual Center in Atlanta, Georgia. The materials are for use in health sciences professional education only.

For the first time the catalog has been computer-generated from NLM's AVLINE data base (*News*, February 1976) and contains an abstract for each item listed. All of the materials have been professionally reviewed for technical quality, currency, educational design, and accuracy. The items are listed by subject (using NLM's Medical Subject Headings) and by name/title.

The Superintendent of Documents (Government Printing Office, Washington, D.C. 20402) is now accepting orders for the *1977 National Medical Audiovisual Center Catalog*. Price: $4.25 ($5.35 foreign). Stock Number 017-052-00181-7.

Lending Original Materials: Changes in NLM Procedures

Columns of statistics may appear dull on the printed page, but they can serve as a barometer on how well we are serving the health science community. The Library's annual report for Fiscal Year 1976 (see page 8) reveals an enormous increase in the number of interlibrary loans of original material. Between FY 1974 and FY 1976 original loans jumped 70 percent, far outstripping the rise in loans of photocopy.

The processing of requests is more difficult and time consuming for original material than it is for photocopied material. According to Sheldon Kotzin, Head of the Loan and Stack Section (Reference Services Division), NLM has been able to meet this rising demand only with great difficulty, since manpower resources are very limited. Several measures to ease the pressures at NLM and also to provide better service to requesters were suggested by the fact that fully one-third of all requests that NLM cannot fill are unfillable because the original material is already out on loan.

The first change in procedure, effective May 1, is to reduce the loan period from four weeks to three (no renewals permitted). This will allow one week in transit each way and one week for actual use of the item. It is important that the originating librarian notify the patron as soon as material is received from NLM, impress upon him the importance of returning the book promptly to the library, and return the book by mail to NLM no later than one week before its due date.

The new three-week loan period means that any item out on loan will be returned in 10 days (on the average) after NLM receives another request for the same material. This makes it feasible for NLM to begin a "hold" service: When an item is not immediately available because it is out on loan or at the bindery, up to two requests for it will be held for later fulfillment. An interim report will be sent to the requesting library informing it of the reserve. This will eliminate the need for libraries to generate a second request.

The success of both these new policies—the three-week loan period and the hold service—will depend on the cooperation of each institution. Original material must be returned promptly so it may be sent on to the next requester.

A third change in policy aims at speeding up the handling of requests at NLM. Many requests for monographs are verified with citations from the *NLM Current Catalog*, CATLINE, or

Index Medicus. This makes it possible for librarians to include the NLM call number on their requests, thus expediting the processing at NLM. Beginning June 1, all requests verified from these sources must contain the NLM call number (when available), or be considered incomplete and subject to rejection. It should be noted that requests with the correct call number are processed two to three days faster than those without.

Mr. Kotzin believes that these changes in interlibrary loan procedure will improve both the speed with which requests for original material are handled and their fulfillment rate.

New Exhibit on Medicine and Music

The belief in the power of music to drive out evil spirits or to summon beneficent ones has a long history. The Library, drawing on its extensive historical resources, is making "Medicine and Music" the subject of an exhibit open to public viewing from May 2 to August 26.

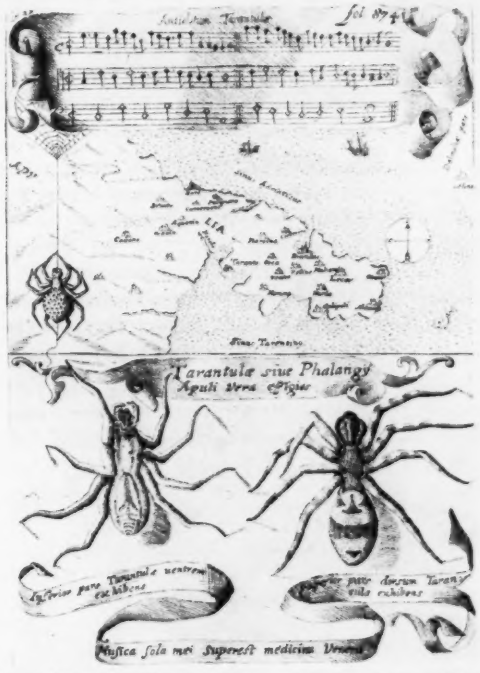
Visitors will learn about tarantism, a disease believed in the 17th and 18th centuries to be caused by the bite of the tarantula spider and to be cured by music (the "tarantella") which induced the victim to participate in a frenzied (and curative) dance.

From Athanasius Kircher, *Phonurgia nova*, 1673. A type of tarantella dance. Music, typically involving short phrases played over and over with increasing tempo, induced the tarantism victims to rise from their stupor, sometimes waving swords in the air as they whirled and jumped in a frenzied dance. The dancing would continue for several days, after which the patients appeared to be healed.

The exhibit also features an audio recording excerpted from Marin Marais's *Tableau de l' Operation de la Taille*. This is a musical description of a lithotomy (an operation for the removal of stones), composed for viola da gamba and harpsichord and published in 1725. The composer, who had survived this operation a few years earlier, gives musical expression to the patient's feelings at each step of the surgical procedure.

In addition, the exhibit includes a number of books, ranging from the 17th to 20th centuries, which show the development of theories attempting to explain the physiological effects of music.

Notes on the relationship between medicine and music through the ages will be found in a brochure (*Medicine and Music*). The booklet is available without charge at the exhibit, or by writing to the Library's Office of Inquiries and enclosing a self-addressed mailing label with the request.



From Athanasius Kircher, *Magnes; sive, De arte magnetica*, 1641. Several examples of tarantellas were preserved by Kircher, a physician and musicologist, in the mid-17th century. This music, when performed, was believed to cure tarantism by inducing the victim to participate in a frenzied dance.

On-Line User Charges at NLM

The National Library of Medicine has begun charging its patrons for computerized on-line bibliographic search services. The new schedule of fees applies only to searches of NLM's data bases performed at terminals within the Library.

The charge for the use of the system is $4 for each search of a current file, with a maximum of 20 minutes connect time to the computers and 25 citations printed on-line. A lower charge of $3 for each search will be made during evening hours. Payment at the time of the search must be made by check or money order payable to the Treasurer of the United States.

NLM Reference Librarian Howard Drew performs a MEDLINE search for Dr. Bert Staples of Germantown, Maryland. Dr. Staples was the first NLM patron to be charged for an on-line search.

MEDLINE backfiles may be searched at $2 per file. Available backfiles are for the periods 1966-68, 1969-71, and 1972-74. There is no charge for using the CATLINE or AVLINE data bases to identify individual items or determine call numbers (as an alternative to using the card catalog).

Schedule for on-line service in the NLM Reading Room:

Monday	9-11 a.m.	$4
	1-4 p.m.	$4
	6-8 p.m.	$3
Tuesday	1-4 p.m.	$4
	6-8 p.m.	$3
Wednesday	9-11 a.m.	$4
	1-4 p.m.	$4
	6-8 p.m.	$3
Thursday	9-11 a.m.	$4
	1-4 p.m.	$4
	6-8 p.m.	$3
Friday	9-11a.m.	$4
	1-4 p.m.	$4

Grant Aids Network in Idaho

A project to pull together the sparse and diverse biomedical information services in Idaho has recently been funded by the National Library of Medicine. This ambitious project in networking—named IDA-HEAL-NET—will be directed by Idaho's State Library in Boise. NLM funds, provided under a three-year Library Resource Project Grant, will be used for personnel (including a full-time librarian), workshop materials, consultative services, supplies, and travel.

Since Idaho has no medical school or school of library science, the State Library in Boise accepted the responsibility for coordinating the project. It is unusual for a state library to become so actively involved in the health science information field, and the project director, State Librarian Helen Miller, sees this new involvement as an interesting and challenging direction for the state's information services to take.

A brief description of the state suggests the need for a health sciences information network, as well as the special problems to be faced in developing it. The state's population of 713,000 is scattered over a large, rough terrain. The 52 hospitals serving this population average 32 beds in size (only 12 have more than 100 beds), and many do not have identifiable libraries.

There are three natural geographic divisions within Idaho (north, southeast, and southwest), and each region has an "area health education consortium" (AHEC). The three AHECs are playing a key role in the development of IDA-HEAL-NET. Since together they include representatives of the state's health practitioners, institutions of higher education, and most hospitals, they provide a ready communication mechanism for coordinating information services to support the state's health programs. Representatives of the three AHECs meet monthly, and IDA-HEAL-NET planners draw upon their expertise in an ex-

change of ideas relating to improved health information services.

Judy Romans, a recent NLM Library Associate (*News*, September 1975), has been hired as the network's full-time health sciences librarian. Currently, Ms. Romans is working with hospital librarians on a union list of serials, planning workshops, and coordinating on-line services throughout the state—there are now three MEDLINE centers, one in each of the three regions. Other projects include development of a union list of audiovisual materials and improved statistical procedures for document delivery services.

NMAC Deputy Director and New Branch Chief Named

Myron J. Adams, Jr., M.D., has been appointed Deputy Director of the Library's National Medical Audiovisual Center (NMAC) in Atlanta. Stewart H. Rowberry, D.D.S., Ph.D., will succeed Dr. Adams as Chief of the Center's Materials Development Branch.

Dr. Adams (*left*) discusses with Dr. Rowberry a storyboard for an instructional unit in medical education.

Dr. Adams has been associated with NMAC since 1971. A graduate of Harvard University in 1962, he went on to receive his M.D. from Vanderbilt University's School of Medicine in 1966. Dr. Adams became interested in teaching aspects of medical education during his pediatric training at Johns Hopkins Hospital. There he set up "clinical correlations sessions" in which residents met with small groups of first-year medical students and showed them clinical examples of what the students were studying in their lectures. After choosing a career in academic medicine, he wanted to learn more about teaching methods in medical education; it was for this reason that he came to NMAC.

As Medical Advisor at NMAC, Dr. Adams was contributing author to the award-winning self-instructional series, *Introduction to Congenital Heart Disease*. He also designed media production workshops for medical school faculty; these workshops have produced more than thirty self-instructional slide-tape units for national distribution. As Chief of the Materials Development Branch, he established procedures and specifications for instructional material development, and supervised 40 educational and production personnel. In 1976 he received the NLM Regents Award for Scientific or Technical Achievement (*News*, July 1976).

The new Chief of the Materials Development Branch, Dr. Rowberry, was formerly Assistant Chief of the Center's Educational Research and Evaluation Branch, having joined NMAC in that capacity in 1974. He received his D.D.S. from Northwestern University in 1957, and later worked at the National Institutes of Health Clinical Center and the National Institute of Dental Research. To become more involved with dental education, he transferred to the Dental Health Center in San Francisco.

In 1970 he received from the University of Iowa an M.S. in Educational Testing and Measurement, followed by an M.A. in Audio Visual Media (1971), and a Ph.D. in Educational Psychology (1971). He then returned to the Dental Health Center, becoming Dental Education Officer. After the Center's closing in 1974, he joined the NMAC staff where he has been involved in AV workshops for health professionals as well as producing self-instructional units on topics ranging from clinical dentistry to educational methods and evaluation techniques.

NLM Experiments with Flexitime

The Library's Bibliographic Services Division (BSD) has begun a one-year trial of flexible working hours for its staff of 52 members. BSD employees index the journal literature for MEDLARS, manage the day-to-day operation of

(Continued on page 8)

Coast-to-Coast Interac

(Continued from page 1)

Regional Commission, who spoke on Regional Developments in Rural Health, and Dr. Thomas Plaut, Deputy Director of the National Institute of Mental Health. Dr. Plaut, who spoke on the Integration of Rural Mental Health Services, noted that "telepsychiatry" might prove successful in certain group therapy situations.

The Communications Technology Satellite, which served as the communications relay in the sky, is a joint project of Canada and the United States. The satellite, measuring 55 feet in length when its solar panels are fully deployed, was designed and built by the Canadian government. The United States then launched it into orbit from the Kennedy Space Center in Florida on January 17, 1976. Positioned at 116° W longitude, the satellite's two antennas can be moved freely to any part of North America, each antenna footprint covering an area equal to the entire West Coast. It is expected that CTS will continue its mission of providing an advanced telecommunications medium for experimentation in social applications for the next two years.

TV camera in Billings Auditorium picks up classroom participants for transmission to Palo Alto.

30th National Conference on Rural Health: Dr. Kenneth Endicott (right), Director of the Lister Hill Center, in a transcontinental exchange with Dr. Ralph Christenson (visible on the TV monitor). Dr. Christenson, a former staff member of the Lister Hill Center, was attending the Conference in Seattle.

active TV for Health

Bill Leonard, Production Director (*left*), and Lister Hill Center staff member Steve Yanek follow the teleconference on control room monitor.

Bill Leonard and technician Jim Kreitner oversee the operation from NLM's new CTS control room.

First CTS/PHS teleconference: Interactive TV brings instruction "live" (on monitors) from Palo Alto to Lister Hill Center and RCA staff in NLM's Billings Auditorium. *Right.* **The 10-foot parabolic dish antenna used for CTS communication from Bethesda is located behind the Library. NLM has the first of six CTS/PHS earth terminals.**

(Continued from page 5)

the on-line network, and perform special on-line searches of the data bases.

In Flexitime, the normal fixed times of arrival and departure are replaced by an eight-hour working day composed of "core time" and "flexible time." All employees must be present each day during core time—9:30 - 11:30 a.m. and 1:30 - 2:30 p.m. The hours before and after the core time are flexible: employees may report for work as early as 6:00 a.m. All staff must work or otherwise account (by annual or sick leave) for an eight-hour day (not including the lunch period). Attendance records are kept on a sign-in register to monitor the Flexitime experiment.

The first two months of Flexitime in BSD show that two percent of the staff arrive between 6 and 7 a.m., 32 percent between 7 and 8, and 66 percent between 8 and 9:30. However, there is a wide variation between the patterns established by the Index Section and the MEDLARS Management Section, the Division's two major components.

A Flexitime Committee has been established within BSD to monitor the progress of the experiment.

Publication Notes

FY 1976 NLM Annual Report Available

Copies of the Library's annual report, *NLM Programs and Services*, covering fiscal year 1976, are available without charge from NLM's Office of Inquiries. Send a small self-addressed mailing label (no postage necessary) to:

Office of Inquiries
ATTN: Report/76
National Library of Medicine
8600 Rockville Pike
Bethesda, Maryland 20014

TOX-TIPS Becomes Sale Item

The January issue of the *News* reported on a new monthly current awareness bulletin called *Toxicology Testing in Progress* (TOX-TIPS). A number of experimental issues have been distributed without charge; however, beginning with the July 1977 issue, TOX-TIPS will be offered only as a paid subscription item from the National Technical Information Service (5285 Port Royal Road, Springfield, VA 22161). Annual subscription price: $25 North American Continent ($35 all others) for the first, and $15 North American Continent ($25 all others) for each additional subscription going to the same address.

Lister Hill Center Report

An Experimental Distributed Database System (January 1977). By Dr. John H. Carson. Available for $4.00 ($3.00 microfiche) from the National Technical Information Service (5285 Port Royal Road, Springfield, VA 22161). Order Number: PB-264-882. This report was prepared under contract by the Mitre Corporation for the Library's Lister Hill National Center for Biomedical Communications. The report investigates the problems associated with distributed database processing between minicomputers and large mainframe systems. Experiments were performed to evaluate alternative approaches and study possible problem areas. An operational system using a Data General ECLIPSE S200 minicomputer and the NLM MEDLINE system was developed during this investigation.

Personnel Notes

Changes to Staff Directory

The following changes should be made in the NLM Staff Directory (*News*, April 1977, Supplement 1):

- Page 1: The Special Assistant to the Director, Lister Hill Center, is *Lionel* Bernstein, not Leonard(!).
- The new administrative officer for the Lister Hill Center is Richard Albrecht. He also serves in this capacity for Specialized Information Services.
- Barbara Sternick is Chief (no longer Acting Chief), Communications Branch, Office of Computer and Communications Systems.
- Page 3: Melvin J. Josephs, Ph.D. has been named Acting Chief, Toxicology Information Services Branch, Specialized Information Services.

Staff Gains

- Ora M. Battle, Library Technician, Reference Services Division
- Suellen Glickman, Librarian, Biblio-

graphic Services Division

- Maria A. Monaldo, Secretary, Technical Services Division
- Frieda O. Weise, Librarian, Reference Services Division

Staff Losses

- Muriel Dury, Librarian, Reference Services Division
- Cynthia Hale-Wilson, Clerk-Typist, History of Medicine Division

NLM Serial Gap List

The following journal issues are this month's continuation to the list of gaps in the Library's collection. If you can supply any of these items, please address them to:

National Library of Medicine
TSD-GAPS
8600 Rockville Pike
Bethesda, MD 20014

Current Topics In Anthropology 9, 1974; 10, 1975

DACAS: Drug Abuse Current Awareness System 1:2-24, 1973; 3:4-23, 1975; 4:3, 1975

Finnish Foundation for Alcohol Studies(Publication) 11, 1962

Genetika 12, 13

Henry Ford Hospital Medical Journal 22:1, 1974

Homoeopathy (London) 23:11, 1973; 24:4, 1974

Hormones and Behavior 4:4, 1973

Hospital Supervisors Bulletin ns. 216-217, 222, 233-235, 1973

Industrial Gerontology new series 1:3, 1974

Irish Medical Journal 67:14-17, 19

Journal of Clinical Pathology, Supplement 1967, 1968

Journal of the New Jersey Speech and Hearing Association 1:1-2, 1962; 2:2, 1963; 3:2, 1964; 4:2, 1965; 5:2, 1966; 6:2, 1967; 8:1-2, 1970; 9:2, 1971; 10:2, 1972; 11:2, 1973

Journal—Oklahoma State Dental Association 57:4, 1967; 59:4, 1969; 61:1, 1970

Lyon Medical, La Revue Lyonnaise de Medecine 225:4, 1971

Marquette Medical Review 33:2, 1967

McGill Dental Review vols. 29-35

Nursing Times 64:12, 1968

Processing 2, 1967

New BLRC Members Named

Four new members have been named to the Biomedical Library Review Committee. The 15-member Committee meets three times a year to review grant applications. The new members replace Dr. Lois DeBakey, Mr. Donald J. Hillman, Miss Nancy M. Lorenzi, and Dr. Josiah Macy, Jr., whose terms expire June 30. The new members, appointed to a four-year term, are:

Professor Pauline A. Atherton
School of Information Studies
Syracuse University

Gail I. Bank, Ph.D.
Director of Continuing Medical Education
School of Medicine
Wayne State University

Ms. Jean K. Miller
Director
The Medical Library Center of New York

Warner V. Slack, M.D.
Associate Professor of Medicine
Harvard Medical School

Summer Hours

The Library's hours from May 31 through September 2 will be 8:30 to 5:00 Monday through Saturday. The Library is always closed Sundays. Upcoming holidays are Saturday, May 28; Monday, May 30; Saturday, July 2; Monday, July 4; Saturday, September 3; and Monday, September 5.

NLM Publication Grant Program

Recent publications resulting from NLM support under provisions of the Medical Library Assistance Act are listed below. This concludes a list begun in the February-March issue.

Grob, Gerald N. "The Political System and Social Policy in the Nineteenth Century: Legacy of the Revolution," *Mid-America*, Vol. 58, No. 1, January 1976, pp. 5-19.

Grun, Paul. *Cytoplasmic Genetics and Evolution*. New York: Columbia University Press, 1976. 435 pp.

Hand, Wayland D. (ed.). *American Folk Medicine*. Berkeley, California: University of California Press, 1976. 347 pp.

Hanson, Ann Ellis. "Signs," *Journal of Women in Culture and Society*, Vol. 1, No. 2, Winter 1975, pp. 567-584.

Howard, R. Palmer, "The Origin of the Oklahoma County Medical Society," *Bulletin of the Oklahoma County Medical Society*, Vol. 47, No. 1, January 1975. 23 pp.

_____. "Oklahoma County Medical Activities in 1902," *Bulletin of the Oklahoma County Medical Society*, Vol. 47, No. 3, March 1975, pp. 25-27.

_____. "Medical Advances in America Since 1776," *Bulletin of the Oklahoma County Medical Society*, Vol. 48, January 1976, pp. 21-25.

_____. "Indian Medicine," *Chronicles of Oklahoma*, Vol. 53, Winter 1975-1976, pp. 532-533.

_____. "From O.U. Medical School...To Health Sciences Center: 1900-76." *Bulletin of the Oklahoma County Medical Society*, Vol. 48, April 1976, pp. 22-23.

_____. "Medicine in Oklahoma County and the Twin Territories in 1906." *Bulletin of the Oklahoma County Medical Society*, Vol. 48, September 1976, pp. 22-23.

_____. "Medicine in Oklahoma During 1907." *Bulletin of the Oklahoma County Medical Society*, Vol. 49, January 1977, p. 13.

Howard, R.P., and Allen, V.E. "Stress and Death in the Settlement of Indian Territory," *The Chronicles of Oklahoma*, Vol. 54, Fall 1976.

Langley, P.A. "Initiation and Regulation of Ingestion by Hematophagous Arthropods," *Journal of Medical Entomology*, Vol. 13, No. 2, September 10, 1976, pp. 121-130.

Mosquito News; Journal of the American Mosquito Control Association. Bibliographic Section: "Literature References to Mosquitoes and Mosquito-borne Diseases." Comp. Helen Sollers-Riedel. Selma, California, December 1975, pp. 577-633.

O'Neill, Y.V., and Chan, Gerald L. "A Chinese Coroner's Manual and the Evolution of Anatomy," *Journal of the History of Medicine and Allied* Sciences, Vol. XXI, No. 1, January 1976, pp. 3-16.

Risse, Guenter B. " 'Philosophical' Medicine in Nineteenth-Century Germany: An Episode in the Relations between Philosophy and Medicine," *The Journal of Medicine and Philosophy*, Vol. 1, No. 1, 1976, pp. 72-92.

Savitt, Todd L. "Smothering and Overlaying of Virginia Slave Children: A Suggested Explanation," *Bulletin of the History of Medicine*, Fall 1975, pp. 400-404.

Scott, Alwyn C., "Neurodynamics (A Critical Survey)," *Technical Summary Report for the Mathematics Research Center* (TSR #1548), 1975. 82 pp.

Schaller, O., Habel, R.E., and Frewein, J. (eds.). *Changes in the Nomina Anatomica Veterinaria*. Zentralblatt fur Vet. Med. Series C. Anat. Histo. Embryol. Vol. 5, 1975, pp. 83-90.

Sheridan, Richard B. " 'Sweet Malefactor': The Social Costs of Slavery and Sugar in Jamaica and Cuba, 1807-54," *The Economic History Review*, Second Series, Vol. XXIX, No. 2, May 1976, pp. 236-237.

Siegel, Rudolph E. *Galen on the Affected Parts*. Basel, Switzerland: S. Karger, 1976. 233 pp.

Smith, Hobart and Smith, Rozella B. *Synopsis of the Herpetofauna. Mexico. Vol. III: Source Analysis and Index for Mexican Reptiles*. North Bennington, Vt.: John Johnson, 1976.

Sollers-Riedel, Helen. "Mosquitoes and Disease Problems—World-Wide in 1973," *Proceedings of the Sixty-First Annual Meeting of the New Jersey Mosquito Extermination Association*, 1974 Supplement. n.p.p. 55 pp.

Wharton, G.W. "House Dust Mites," *Journal of Medical Entomology,* Vol. 12, No. 6, pp. 577-621.

Whorton, James C. " 'Christian Physiology': William Alcott's Prescription for the Millenium," *Bulletin of the History of Medicine,* Vol. 49, 1975, pp. 466-481.

Automation of Technical Services

The Technical Services Division (TSD) is responsible for the rapid dissemination of authoritative bibliographic cataloging information for all formats of material in the fields of biomedicine and health care delivery.

Since the implementation of MEDLARS I in 1965, the first ten years of automation in TSD were concentrated on the Interim Cataloging Module, which controlled the production of the Library's printed book catalogs and catalog cards. From this basic batch processing system in cataloging, automated activities have evolved to on-line retrieval systems with full network capability, and the utilization of a proprietary Data Base Management System to control major processing functions within NLM—acquisitions, cataloging, and serial records.

Since 1973, automation projects have been undertaken to control the flow of all materials in the Division, to control and monitor the literature budget, to control all uncataloged materials in the library, and to produce the orders, claims, and cancellation notices.

Each month TSD requires over 2500 hours of on-line connect time to support its programs—25 percent of the total connect time on the NLM computer system. In terms of simultaneous users, TSD requires communications support for an average of 15 continuous simultaneous users each day.

Technical Services On-Line Data Bases

The first three data bases listed are available over the Library's on-line network; the remaining files are run by INQUIRE and are used for technical processing with NLM.

CATLINE (Catalog On-Line). This retrieval file holds citation data pertaining to all biomedical literature cataloged at NLM since 1965 and appearing in the current catalog literature. The file contains 168,000 citation records.

Name Authority File. This retrieval file contains authority data (83,000 records) for names and series titles for use in validating catalog entries.

AVLINE (Audiovisuals On-Line). This retrieval file holds referenced data to audiovisual materials that are available for national distribution and that have been evaluated by peer review under the auspices of national professional organizations.

INQUIRE (On-Line Data Management System). INQUIRE is a data base management system that allows the user to maintain and make effective use of a large body of information. The system consists of an integrated set of computer programs which collectively provide for locating and retrieving specific items of information from a large file, organizing and formatting the information which is stored in the file, and generating reports from the file either at a remote on-line terminal or at the computer center. The INQUIRE software system consists of generalized data management software for building data bases and interrogating these data bases both on-line and off-line, and producing formatted reports.

INPROC (In-Process File). This data base file contains approximately 50,000 process control records that are used by NLM to control the ordering of books and to identify publications that have been received at NLM but not yet cataloged and added to CATLINE.

INVOICE (Invoice Data File). This data base file (approximately 14,000 records) holds all invoice data from acquisitions that are made by NLM. The retrieval data are used to help manage NLM's annual budget for acquiring library materials.

AVBIB (Inprocess Non-Print Material). This data base file holds 5,000 records that contain references to medical audiovisuals in the pro-

cess of being reviewed, cataloged, indexed and evaluated, and data relating to their availability.

SERIALS/MIS (Serials Management Information System). This data base file contains several data bases of management information for all of NLM's serials with data on holdings, gaps, subscriptions, locator codes, prices, etc. Data base records for SERLINE (Serials On-Line) are generated from this file. SERIALS/MIS contains about 25,000 records.

Extending the Benefits of Automation

NLM is presently concentrating on automating its own technical processing capability to provide better services to health science libraries. There is the potential, however, of someday extending these capabilities to all participants in NLM's on-line network.